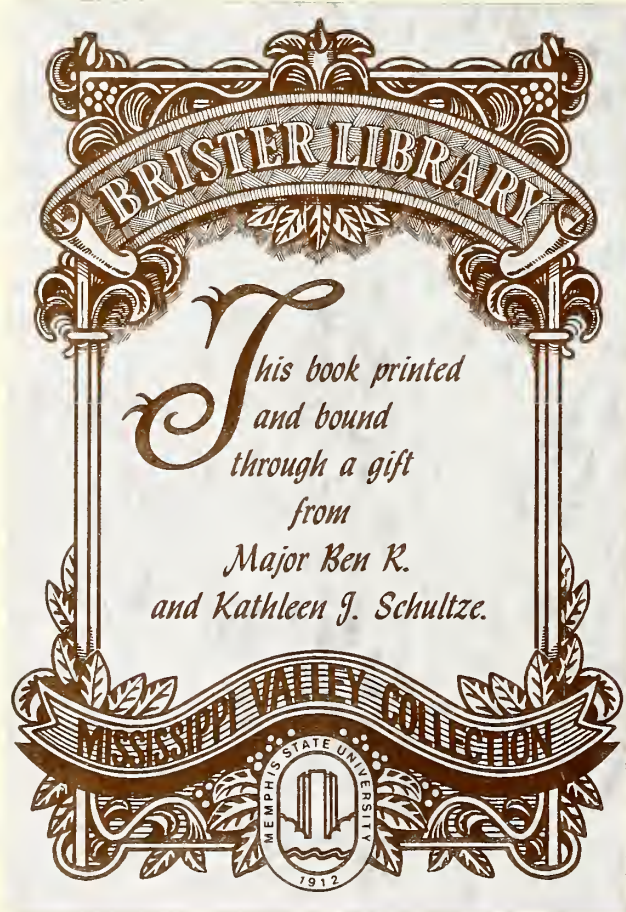


ORAL HISTORY OF THE TENNESSEE VALLEY AUTHORITY
INTERVIEW WITH
VAN COURT HARE

BY - CHARLES W. CRAWFORD
ORAL HISTORY RESEARCH OFFICE
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DECEMBER 10, 1969

BY CHARLES W. CRAWFORD

ORAL HISTORY RESEARCH OFFICE

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I hereby release all right, title, or interest in and to all of my tape-recorded memoirs to the Mississippi Valley Archives of the John Willard Brister Library of Memphis State University and declare that they may be used without any restriction whatsoever and may be copyrighted and published by the said Archives, which also may assign said copyright and publication rights to serious research scholars.

PLACE Knoxville, Tenn.

DATE Dec. 10, 1969

Van Court Hare
(Interviewee) VAN COURT HARE

Charles W. Crawford
(For the Mississippi Valley Archives
of the John Willard Brister Library
of Memphis State University)



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THIS IS MEMPHIS STATE UNIVERSITY ORAL HISTORY RESEARCH OFFICE PROJECT,
AN ORAL HISTORY OF THE TENNESSEE VALLEY AUTHORITY. THE DATE IS
DECEMBER 10, 1969. THE INTERVIEW IS WITH MR. VAN COURT HARE, FORMERLY
WITH THE TENNESSEE VALLEY AUTHORITY. HE IS PRESENTLY LIVING IN KNOX-
VILLE, TENNESSEE. THE INTERVIEWER IS DR. CHARLES W. CRAWFORD OF
MEMPHIS STATE UNIVERSITY, MEMPHIS, TENNESSEE.

DR. CRAWFORD: Mr. Hare, I suggest that we start by following whatever form you
like, but at the beginning it might be well to get some information about
your early life, your education, and your experience before joining TVA.

MR. HARE: Doctor, I attended the University of Tennessee from December 1918,
to June, 1920, and studied civil engineering. Then I transferred to Massa-
chusetts Institute of Technology in October of 1920, and received a B. S.
degree in June, 1923, majoring in structural design. Shall I go on?

DR. CRAWFORD: Yes, sir. First, can you give us some information about your life
before joining the University of Tennessee? You were born in 1900, I believe,
in Memphis.

MR. HARE: That's right. I was born in 1900 in Memphis, and attended the
schools in Memphis. My family had been in Memphis for generations. I married
Helen Bailey, whose family also lived in Memphis. After completing M. I. T.,
I returned to Memphis, and as an engineer in the offices of Mahan and Broad-
well, Architects, I designed structures from June 1923 to March 1924, and
detailed many buildings and other types of structures during that period.
From March 1924 to May 1932, I was associated with Gardner and Howe, Struc-
tural Engineers of Memphis, Tennessee and Dallas, Texas.

DR. CRAWFORD: At which office did you work?

MR. HARE: I worked in the Memphis office; although on occasion I would go to Dallas for a special assignment there.

DR. CRAWFORD: Did you ever spend much time in Dallas?

MR. HARE: Yes, because the firm there had a great amount of work in Texas at that time. This, of course, was in the affluent twenties. Texas was expanding the University of Texas, and Dallas was developing rapidly. So the office there was quite successful.

However, the firm started in Memphis. Mr. Harry N. Howe, incidentally, a graduate of Cornell, was one of the most capable engineers that I have had the privilege of working with in my whole experience. His firm is still active in Memphis. It is being operated now by his son, Warner Howe, also a graduate of Cornell.

DR. CRAWFORD: Did you do any hydraulic engineering in that time?

MR. HARE: Well, I should have told you that at M. I. T., while I majored in structural design, I took three years to get the B. S. degree and took extra work, including an intensive course in hydraulics. I also had one in bridge design with some of the noted M. I. T. professors in that field. I worked on the water supply system in Memphis at one stage. I will tell you of this later in more detail.

DR. CRAWFORD: What was the nature of the water supply then? Did it involve the use of wells?

MR. HARE: Yes. Of course, most of Memphis' water comes from wells. They are very fortunate in Memphis. They have an artesian water supply. There are not many cities that have that. However, it was felt necessary then to treat that water, to aeriate it, and to filter and do other things, so that the expansion involved reservoirs and many other structures. I had a part in their design.

MR. HARE: From December 1930 to June 1931, arrangements having been made with (Cont'd.)

Gardner and Howe, I was associated with Thomas H. Allen of Memphis and Fuller and McClintock of New York on this structural plan development of the major expansion of the Memphis water supply project. Responsibilities included the scheduling and production of structural plans for the reinforced concrete for the reservoirs, aeriators, filter plants, and pumping stations. It was essential to produce results with time as one of the controlling factors. That was, as you will note, 1930-1931, and the Great Depression was in full swing at that time. The financing of the expansion had taken place prior to the Depression. It was most difficult for Thomas H. Allen and Fuller and McClintock to complete this contract within the time provided for prior to the Depression. So, that time became of the essence as we strove to complete that contract and stay within the original estimates for the cost of engineering.

I was engaged by the United States Corps of Engineers in October, 1932, at Cairo, Illinois to plan and prepare designs for flood protection projects on the Mississippi River. This assignment was completed in March, 1933. In charge of this work at Cairo was Mr. Albert S. Fry. I think you've interviewed him.

DR. CRAWFORD: Yes, sir.

MR. HARE: Later in 1933, he started with the TVA as one of its earlier employees. Again, from March, 1933 to June, 1933, engineering was handled by me as a private practice and included plans for commercial and industrial building projects.

Prior to this period, due to the fact that the Depression was so severe, Gardner and Howe had temporarily suspended work. Several of us in that organization attempted to develop plans for building projects on our own. We were fairly successful in the Memphis area.

MR. HARE: In June, 1933 (and now I get to the bridge part) Mr. Frank Webster, (Cont'd.)

Commissioner of Highways for the State of Tennessee, was in Memphis and offered me a position as a designer in the bridge department in Nashville. So, until January, 1934, I designed, detailed, and estimated bridge projects for the State of Tennessee. Soon after going with Mr. Webster in 1933, an offer was received from TVA. It was, I felt, impossible to accept at that time, as Mr. Webster had been very kind to have offered me employment in the midst of the Depression. I felt obligated to assist him for a reasonable period and requested TVA to keep me in mind for later consideration. In late December, 1933, another offer was received from TVA, and was accepted with the understanding that I was to report in January, 1934, to the Knoxville office.

Now, Doctor, that pretty well sums up my experience prior to TVA.

DR. CRAWFORD: Fine, sir. Let's get into your experience with TVA, then, whenever you're ready to.

MR. HARE: In looking back over my experience with TVA, it seemed to fall within two periods. The first period being from January, 1934, to June, 1942. In January, '34, I was employed as an assistant hydraulic engineer, reporting directly to Mr. Albert Fry, at that time in charge of the administration of the Engineering Department. During this period I completed assignments covering wide ranges of engineering work, requiring both technical and administrative ability. Included in these typical assignments were the structural design and supervision of construction of the TVA hydraulic laboratory at Norris, Tennessee. The planning and preparation of specifications covering the completion of an office building to accommodate personnel of the Engineering and Construction Departments. The design and estimates for a proposed materials testing laboratory and the writing and editing of various technical reports.

MR. HARE: You may be interested in a description quoted from the records of (Cont'd.) that time regarding the duties and responsibilities involved in the position held in 1937. "Responsibilities for the planning, carrying out, and reporting upon the work of the special assignments and reports section of the Engineering Data Division, acts as assistant to the Division head, and in the latter's absence, is in charge of the Division; and is responsible for the preparation of a budget of the Division and for cost records of the Division."

In June of 1941, as senior hydraulic engineer, I was responsible for investigation of floods and resulting damages, accurate estimates of which are essential in water control planning, and an economic consideration and justification of flood control projects. An example, to illustrate the importance of this work, was the flood control investigations of the French Broad River in North Carolina. This involved a complete survey and report on flood damages throughout the basin. Included were damages to municipalities, industries, commercial establishments, railroads, highways, utilities, and agriculture and land. To secure the data required, the cooperation of many people was essential. Included were city officials, heads of industries, railroad and highway officials, and the agricultural interests. Again, quoting from the personnel records of that time, "This position involved major responsibilities in handling important engineering work with a minimum supervisory direction from the division head. Also, it required contacts with the public and with important heads of enterprises, requiring ability to make such contacts successfully." Now, Doctor, I think that briefly sums up the first period of TVA. Unless you have some questions, I shall proceed to the second period.

DR. CRAWFORD: Let's go ahead into the second period, Mr. Hare, and perhaps we'll talk about some details.

MR. HARE: Well, the second period, extended from 1942 to October, 1954.

It was in June of 1942, at the request of Colonel Theodore B. Parker, that I reported to the Office of the Chief Engineer. Colonel Parker was Chief Engineer at that time, and my most important duty was the handling of special assignments for him. These assignments included the handling of the trips and reports of the Board of Consulting Engineers who periodically, at TVA's request, inspected and reported upon the design and construction progress of the major water control projects.

This Board, selected by TVA management, was composed of some of the most outstanding consulting engineers and geologists in the United States. A number, in fact, were internationally known in their special fields. Mr. W. F. Uhl, President of Charles T. Main, Inc., of Boston served as the Chairman. Mr. John L. Savage, former Chief Engineer of the U. S. Bureau of Reclamation at the time of the construction of Hoover Dam, and internationally known for his ability as one of the country's most outstanding engineers, was also a member; as was Dr. Charles P. Berkey of New York, the Dean of American Geologists. There were three geologists on the Board, including Dr. Berkey. Inasmuch as TVA was doing all of its own engineering and construction, and as work was subject to periodic review and criticism by the Congress and others, the TVA management's decision to have such a Board to review and to report on its work was very much in order.

The Consulting Board's reports were then published in each project report and made available to the Congress and the public. Another example of special assignments were services as a Water Consultant to the Tennessee-Cumberland Committee in 1942.

MR. HARE: The membership of this committee consisted of representatives of
(Cont'd.) federal, state, and local agencies in the area concerned with the water resource development of the region. In addition to the special assignments for the Chief Engineer as a member of his staff, there was a responsibility for production of reports issued by the Engineering and Construction Divisions. This consisted of having the reports submitted, co-ordinating them between divisions, determining the correction of factual data, and with general responsibility for the character and appropriateness of such report. Also included were responsibilities for initiating general reports in the office of the Chief Engineer, such as the annual reports covering the engineering and construction work of TVA.

One of the most interesting responsibilities had to do with the foreign engineers who visited TVA. There were many of these engineers whose visits were arranged in accordance with the request of the U. S. Department of State. These engineers were sent by their respective governments to gain specialized engineering experience. Among these varied duties and responsibilities of this position was the scheduling of assignments for these engineers, to insure the efficient utilization of the time allotted them with TVA. Also, as a member of the staff of the Chief Engineer, there was a responsibility of explaining and discussing the program of engineering development in the Tennessee Valley with many distinguished visitors. Included were Senators and Congressmen, U. S. Government committees, the heads of foreign governments, technical missions composed of leading engineers from many countries of the world, and engineers from industry in this country and from abroad.

Doctor, I think that that about gives a resumé of the positions and some of the assignments to illustrate my responsibilities as a member of the

MR. HARE: staff of the Chief Engineer. Next, if it seems in order, I should (Cont'd.)

like to tell you of the special assignments carried out for TVA outside of the Tennessee Valley.

DR. CRAWFORD: Fine. I'm very interested in that, Mr. Hare.

MR. HARE: In 1946, TVA was requested to assist the United Nations by loaning two members of its staff to investigate sites for the headquarters of that organization. Mr. Howard Menhenick, a well-qualified city planner on TVA's staff, was selected as the Director of the Technical Staff to serve the headquarters committee of the United Nations. I was selected as his assistant, and to serve as an engineer member of that staff. The duties of that position included investigation of foundation conditions, water supply, sanitation, highway and railroad facilities, and the over all direction of the preparation of the report giving results of the Technical Staff's investigations and recommendations.

This work involved investigation of numerous sites in the New York area. Fortunately, a member of TVA's Board of Consultants, Dr. Charles P. Berkey, was available to report on the geology and suitability of the sites as far as foundations were concerned. It is interesting to recall that the Russian member of the United Nations Committee questioned Dr. Berkey's report in one instance. The Dean of American Geologists, who had for over half a century worked in the New York area, cleared the matter firmly and tactfully. There were no further questions regarding geology of the sites in that area.

This work with the United Nations involved securing the cooperation and assistance of officials in private industry and federal, state, and local levels of government. For example, the cooperation of the Army Map Service was essential to the production of topographic maps of the various sites

MR. HARE: investigated. To secure the railroad data it was necessary to
(Cont'd.) schedule conferences and secure the cooperation of the New York Central Railroad. For data on utilities it was necessary to secure the cooperation of officials of the Consolidated Edison Company and the New York Board of Water Supply. Later, during the meeting of the General Assembly, we were delegated to assist in investigating and reporting upon prospective sites in the San Francisco area. Still later, in Boston and New York, we were responsible for special investigations and assisted in preparation of data and reports used by the United Nations Headquarters Committee in making its final decision as to the site of the headquarters of the United Nations.

In the spring of 1949, the United States House of Representatives Appropriations Committee requested TVA to loan an engineer to assist its staff in making a comprehensive survey of the Veterans' Hospital construction program. Accompanied by a legal staff member from the Justice Department, an inspection of projects located in all sections of the United States was made. An appraisal was made of both quality and progress of the work. Congress had appropriated over one billion dollars for this program. It was necessary to interview a member of all architectural, engineering, and construction firms responsible for the projects inspected and prepare a report for the Chairman of the Appropriations Committee, giving the results of this survey. The Honorable Clarence Cannon was the Chairman of the House Appropriations Committee, and we were appreciative of a letter he was kind enough to send TVA regarding the service rendered in connection with this survey.

The latter part of 1949 was noteworthy in my experience with TVA. For Mr. Gordon R. Clapp, Chairman of the Board of Directors of TVA, was requested by President Truman to serve as the United States Representative

MR. HARE: and Chairman of the U. N. Economics Survey Commission to the Near East.
(Cont'd.)

The Deputy Chairmen of the mission were outstanding representatives of Great Britain, France, and Turkey. It was my privilege to accompany Mr. Clapp as a member of the Mission's Technical Staff. That staff was international in its membership and included bankers, financial men, engineers, agriculturalists, irrigation specialists, and economists. In carrying out this assignment, it was necessary to secure the cooperation of and to discuss with leading engineers of the countries of the tense Near East, projects essential to the economic development of the area. It was only by this means that it was possible for the staff of the mission to complete the field work, assemble the basic data on many varied projects, and to review and appraise these data with the limited time available. A report was then prepared defining an engineering program basic to the general economic development of that area, which included Syria, Jordan, Lebanon, and Israel.

In 1951, the Director of the Defense Electric Power Administration requested the loan of a staff member of TVA. During the major part of that year, I served as a consultant for that organization, spending alternate weeks in the headquarters offices of both organizations. While with the Defense Electric Power Administration, the Korean War was at its peak. Materials were short, and it was necessary to schedule major equipment required for installation in both hydro and steam electric generating plants located throughout the United States. Of interest was the fact that the staff of this administration was composed largely of officials and top-level employees of the major utilities of the country. The Director was from Consolidated Edison of New York. I put that in to show that TVA was, and is, respected over the country in the development of power and other resources.

MR. HARE: From November, 1952, to May, 1954, I served as a TVA representative (Cont'd.) for the study of the unified development of the water resources of the Jordan Valley. This study was undertaken by TVA, at the request of the United States Department of State for the United Nations. At that time TVA was extremely busy, and although the request originally came for TVA to carry out the study itself, TVA had to decline. However, the Department of State stressed the importance that TVA direct the study and suggested that TVA could contract with an engineering firm qualified to carry out such a study. This was done and a contract was made with the engineering firm of Charles T. Main, Inc., of Boston. The TVA representative was responsible for all contacts, the general administration of the agreements between the United Nations and TVA, and between TVA and Charles T. Main, Inc.

Included also was the responsibility for the step-by-step review of all phases of the engineering development studies, arrangement of conferences to review progress, to discuss the various phases of the studies with the Department of State and the United Nations, and direct participation in developing the final report.

I might tell you, Doctor, (and I'm sure that you are aware of this) that was a most delicate undertaking due to the tenseness that existed then, and still exists, in the Near East, and particularly in the area under consideration.

In February, 1954, at the request of the U. S. Department of State, I was designated by TVA to travel again to the troubled areas of the Near East and serve as technical and engineering advisor to Eric A. Johnson, special representative of the President for resolving certain water problems affecting that area. The assignment required conferences with leading engineers

MR. HARE: in Egypt, Syria, Lebanon, and Jordan. These are all Arab countries, (Cont'd.) and the problem was to secure the approval of the Arabs to accept the terms of the report for the unified development of that area which indicated benefits to all countries concerned. These engineers had been selected by their respective governments to study the United Nations report on the Unified Development of the Jordan Valley, prepared under TVA's direction by Charles T. Main, Inc. of Boston. Conferences were held and field inspections were carried out with these Arab engineers, on all phases of the proposed development.

Mr. C. E. Blee had succeeded Colonel Parker as Chief Engineer of TVA. He informed me early in the fall of 1954, that Charles T. Main, Inc., of Boston had the contract for the engineering development of the St. Lawrence River. That organization had telephoned him and had requested permission to contact me relative to joining them on the St. Lawrence project. So, in late September of that year, I left the Tennessee Valley for a new adventure. The experience gained through the varied assignments with TVA enabled me to assume with confidence responsibilities associated with the St. Lawrence and later the Niagara Power Projects.

In closing this account of my experience with TVA, I do so with an expression of sincere appreciation to the many staff members who gave me the opportunity to carry out many interesting and varied assignments.

Now, Doctor, that in brief sums up my experience with TVA. I shall be glad to try to answer any questions that you might have.

DR. CRAWFORD: Fine. That's a well-organized summary, Mr. Hare. Let me ask a few questions as we go along about some of the things.

MR. HARE: Could I interrupt just a moment? Something just occurred to me. As I told you, I have been away from TVA for fifteen years, and I have tried to

MR. HARE: summarize, in general, some of the assignments to indicate the privilege (Cont'd.)

that I had of working with TVA. However, I just thought of an assignment that was most essential. It occurred in the early years of TVA. I think it was 1936.

At the outset of TVA, Congress decreed that TVA study an accumulated wealth of data. You see, the Tennessee River had been studied by various organizations for many, many years prior to the creation of TVA. The Corps of Engineers, the U. S. Topographic Survey, and many others had studied and prepared reports on the Tennessee River. Congress instructed TVA to take two years and to study the accumulated data, and submit a report covering its recommendations for the unified development of the Tennessee River system. It was my privilege to be assigned to work with some of the top-level employees of TVA on that report. It was also my privilege to take that report to the TVA Office in Washington. That office granted me the privilege of taking it to the House of Representatives in 1936, I believe it was.

Now, that report formed the basis for the development of the Tennessee Valley. That was the basic plan which has been followed by TVA through the years. Of course, it has been expanded as the occasion required--as the needs of the area required.

DR. CRAWFORD: When did you first arrive in Knoxville for TVA work? What time in '34?

MR. HARE: January, 1934.

DR. CRAWFORD: Did you think of it as a permanent job at that time? Did you feel that TVA would be a lasting organization?

MR. HARE: Oh, I felt so, because I knew the Tennessee River, even before I came to TVA, offered a great opportunity for engineering development. I had talked about that while with the Corps of Engineers on the Mississippi River. We all agreed that the Tennessee River was, as far as engineers were concerned, a real opportunity. I felt privileged at that time to have an offer to work with TVA.

DR. CRAWFORD: Why did you feel that the Tennessee Valley was such an engineering opportunity?

MR. HARE: Because all of the elements were in the Tennessee Valley--the topography, the water supply, the condition of the land. It was really crying for development at that time.

DR. CRAWFORD: Did you have an impression of the scope of the Tennessee Valley Authority? Did you realize that it would cover as large an area as it did when you first came in 1934?

MR. HARE: Well, I felt that it would cover the watershed of the Tennessee River. It couldn't do otherwise. It couldn't approach the prospect of development on a piece-meal basis. It had to be a whole. I realized that, yes.

DR. CRAWFORD: Did you feel that the engineering staff was well-organized when you arrived? Was the work underway at that time?

MR. HARE: Doctor, that is a very good question. I mentioned to you prior to our interview the fact that I had carried out work as a member of a private engineering firm recently, for another authority--the New York State Power Authority. Due to the shortage of this type of qualified talent, that Authority elected not to attempt to build up an organization. TVA, created in the midst of the Depression, was able to secure the most qualified engineering talent in the United States, and they did. That is, to me, one of the foundation stones of TVA. They secured their early employees very carefully, and were able to secure men from the major engineering firms from Boston, New York, San Francisco, any place in the country. As I have indicated to you, the utilities over the country have realized that TVA had experienced engineers from the start.

DR. CRAWFORD: Why was TVA able to assemble such an imposing group of engineers?

MR. HARE: Due to this very fact that they were available due to the Depression.

They came from all parts of the United States.

Now, to answer your first question about the organization, it was necessary under those conditions to have what I would describe as a shake-down period. As time went on I could see the organization develop.

To illustrate, in the early days they had an organization for each project. Norris had a project staff. The next was Wheeler, and then the next project had a project staff. Colonel Parker came in, and realized that there was a long-development project ahead. Each project then was designed separately, equipment was purchased separately--spillway gates and other equipment. Colonel Parker decided in order to affect economy and efficiency, it should be handled on a specialized basis. In other words, the electrical engineers should design everything required in that field for every project. The mechanical engineers should design everything in their field for every project, and the same way with the structural. He further instructed them to duplicate and standardize the design wherever possible. The spillway gates, for instance, were standardized. That effected real economy and efficiency. One of my assignments with the Chief Engineer, Colonel Parker, after that had been in effect for several years was that I would report on the change from the project to this pool system of design. I was requested to prepare, with the cooperation of the design department, a procedure and cost report of the engineering design by TVA. It was amazing for me to find out and to report on the economies brought about by that standardization and duplication of design.

DR. CRAWFORD: Had that been done on any similar scale before, to your knowledge?

MR. HARE: Not to my knowledge. There had not been this opportunity on a long-term development, you see, for that.

DR. CRAWFORD: Did you conclude that the saving was substantial?

MR. HARE: Yes. There is a report on that.

DR. CRAWFORD: It seems to me that you have had a very remarkable group of engineers in the early period. Was any person particularly active in recruiting them?

MR. HARE: That I really can't answer. I was, of course, busy. I think that the TVA management recognized the importance of personnel administration at the outset, and they secured some very able people. For instance, Gordon Clapp was in Personnel before he became General Manager. I knew him very well. I had the privilege of traveling with him and being very close. He was a remarkable man. He was a man of superb intellect and integrity.

DR. CRAWFORD: What was Gordon Clapp's background before joining TVA?

MR. HARE: Well, you can secure that in detail from others. I would suggest that you ask Marguerite Owen that question.

DR. CRAWFORD: I will. Who recruited Colonel Parker? What was his previous experience? Had he been with the Corps of Engineers?

MR. HARE: Colonel Parker was in the regular Army. He was a tough-minded, superb engineer and executive. At one time he had twelve major projects going with some 30,000 men under his direction. He came from Stone and Webster of Boston, one of the oldest engineering and construction firms in this country. They have done work all over the world.

Colonel Parker was in charge of the work on the Columbia River--the Rock Island Project, for Stone and Webster. He had completed that and was with some government agency in Boston. Of course, like so many engineers and construction men, their attention in the depression years was directed

MR. HARE: to this area--the Tennessee Valley. It was an engineering challenge, (Cont'd.) and they wanted to be here. Who recruited him I don't know. I think probably that Mr. Lilienthal can tell you, because Mr. Lilienthal had a great respect for Colonel Parker.

DR. CRAWFORD: How long did he remain with the Authority? He was replaced by Clarence Blee, I believe.

MR. HARE: After the completion of the urgent work required by the war effort, after the completion of Douglas, which was designed and constructed in record time. I don't believe it's ever been equalled. From the start of construction to the first power in thirteen months. Remarkable. And that project was delayed by Congress. TVA couldn't start until the flood season was on so they had to cotterdam with the water at its highest level. In spite of all obstacles, the construction and engineering forces of TVA set a record on that project.

That project was a combination of everything. It tested TVA to the hilt. After the completion of Douglas, Colonel Parker received an offer from M. I. T. from which he had graduated, to become the Head of the Civil Engineering Department. So he resigned, and I can't give you the date. It could have been in '44--somewhere along there. He resigned to go to M. I. T.

DR. CRAWFORD: Do you know what he did after that? Do you know anything about his later career?

MR. HARE: Well, unfortunately, Colonel Parker was a very intense man. He had given of himself unstintedly here. He was not well when he resigned, although I don't think he realized that. He did not get to enjoy his connection with M. I. T. very long. He passed away shortly after going up there.

DR. CRAWFORD: Did you work under Mr. Blee for the remainder of your TVA service?

MR. HARE: I worked under Mr. Blee and enjoyed my association with him. He was a very able individual.

DR. CRAWFORD: Do you know why TVA was chosen or was called on to supply advice about the United Nations location?

MR. HARE: Well, yes I do. The United Nations headquarters committee needed a technical staff. Now, on that United Nations committee there were well-qualified men. Most of them, of course, were diplomats, but there were a number of engineers. Certain countries insisted that they be represented on the technical staff. Russia, for instance. Holland and France, and a number of other countries felt the same way. They selected engineers to be members of that committee. But the headquarters was going to be in the United States. It was necessary to make these contacts that I have outlined with the Federal, State, and local agencies and with many people. Of course, they realized (the U. N. delegation--the United Nations) that this was so and they had to have qualified, technical segments of that staff from the United States. And so the United States furnished the major working manpower on that technical staff.

Now, why they came to the TVA. Here was a reservoir of engineering talent of all kinds. Howard Menhenick was one of the most versatile and well-qualified city planners I've ever known. So they secured him as Director, and it was a wise move.

DR. CRAWFORD: TVA seems to have received many requests for technical assistance. Was it general policy to grant these and release TVA personnel to take part?

MR. HARE: Yes, I think basically it was realized that here was a reservoir of experience that could be used. Here also, it was realized, was integrity.

DR. CRAWFORD: Were you generally pleased with TVA's relations with other agencies?

Were they generally cooperative?

MR. HARE: Oh, yes, yes.

DR. CRAWFORD: What did you do to retain your contacts with the engineering community?

Did you continue to belong to engineering associations?

MR. HARE: Now, you mean? At the present time?

DR. CRAWFORD: No, sir. While with TVA.

MR. HARE: Oh, yes. Sure, I have maintained all of the contacts and all of the memberships. As a matter of fact, TVA encouraged that. TVA engineers and the staff in all branches have been active in organizations.

DR. CRAWFORD: Was that a general policy of the engineers?

MR. HARE: Well, not only of the engineers, but of TVA's management in general.

They encouraged it, and the type of personnel that TVA had would naturally gravitate to civic and other leaderships.

DR. CRAWFORD: Did the working relationship between architects and engineers seem to be satisfactory generally?

MR. HARE: Within TVA?

DR. CRAWFORD: Yes.

MR. HARE: Yes, of course. Having worked with both architects and engineers for many, many years, there is always this give and take. I remember that one of the really great contributions that was made, I feel, to TVA was made by Roland Wank, a TVA architect. In his designs and color selections, he did this. But the engineers used to find, so they said, although, I believe that they admired Mr. Wank's work greatly, but at the time they said that some of his designs were hard to take. He was, in my mind, in advance of his time, architecturally speaking. TVA, because of his contribution and Mr. Tour's, and the other architects that followed in the same line, is well-known in the field of architecture.

DR. CRAWFORD: Many of the early employees were either engineers or lawyers. Did the two groups work together well, or did their work over-lap in any way?

MR. HARE: Oh, no. They worked together well. All of the lawyers that I have known have assisted and have been quite willing to assist. TVA's engineering staff is the same way. It has been a very smooth operation.

DR. CRAWFORD: Do you feel that there has generally been a high degree of morale?

MR. HARE: Exceptionally so. I, having been in other organizations, realize this. Of course, TVA had an exceptional opportunity, and I want to make that point clear. It would be most difficult to create an organization of similar ability at this time.

DR. CRAWFORD: Obviously, being at the bottom of the Depression had something to do with it, but the financial attraction was not the whole thing. Salaries were not particularly high.

MR. HARE: That's quite true. The challenge was here. And a great many of my friends came from New York and Boston to work with TVA. They had opportunities in later years to go back to their original positions after the depression, and they refused to go back. They remained with TVA. And further, when they retired, they have remained here.

DR. CRAWFORD: What sort of record did you have for keeping the personnel that you wanted to?

MR. HARE: Well, again, I think that someone else could better answer that than I. However, it is my feeling that the TVA had an exceptional record of holding the interest of its employees. Very few left. I know many engineers who had offers to leave that have remained here simply because of the program, and the challenge and the environment in which they worked and lived. I had a telephone call from Boston the other day requesting that I give them

MR. HARE: some help in securing two men, and what would be, normally, a fancy (Cont'd.)

salary, was associated with each position. I said, "Where would they report and where would they work?" They would report to an office in New York City and be required to live and work in that city. My reply was that they would not get TVA men unless they had more incentive for them to leave. So, I have made no effort to contact TVA.

DR. CRAWFORD: Then you feel that TVA has the respect of private businesses involved in engineering work?

MR. HARE: I know that. I have dealt with private businesses for the past 15 years.

DR. CRAWFORD: What change did World War II bring to your engineering work?

MR. HARE: Well, no change except to accelerate the whole program. The organization had been affected, as I indicated by the pool organization, and it really paid dividends. TVA accomplished in my mind, noteworthy achievements during that period.

DR. CRAWFORD: Did you have the staff to handle this additional load of work when the War started?

MR. HARE: No, it was difficult to secure the staff, but TVA's staff buckled down and worked over-time. They worked in shifts, and they didn't object to it. It was far more efficient to handle it that way than to get in new people and break them in. Time was so important that TVA just couldn't do that.

DR. CRAWFORD: Did the development of Oak Ridge bring any particular change in your work?

MR. HARE: Do you mean during the war?

DR. CRAWFORD: Yes, sir.

MR. HARE: Yes, of course, additional power capacity was required for Oak Ridge, and that meant completion of certain projects within a very limited time, so that again, Oak Ridge had the tendency to accelerate a program that already had been accelerated.

DR. CRAWFORD: Did you have any idea what they were doing at Oak Ridge before it was generally known?

MR. HARE: No, I didn't. I might tell you this. It was my privilege to be in Colonel Parker's office--just the two of us--when a telephone call came from the Manhattan District's General Groves requesting Colonel Parker to loan the Corps of Engineers several cars to make a reconnaissance trip northwest of Knoxville. Colonel Parker indicated that, of course, the cars would be available and drivers also. He was told that they didn't want drivers. Colonel Parker then said, "Well, we'll have one man whoknows the whole area that you might be interested in." (They had told him in general the area.) "And this one man will have topographic maps with him. He's familiar with the whole area, and I personally will instruct him that whenever you confer in the field, to remove himself." Colonel Parker selected Mr. W. R. Chambers, a man with great discretion, a mature man with good judgment. He went with them on this first field trip. It also turned out that Mr. Chambers was the first employee of Oak Ridge, Manhattan District, from this area.

DR. CRAWFORD: Did you find your work changing in any way when the development of steam plants started?

MR. HARE: That's a good question. The first steam plant designed and constructed by TVA was Watts Bar. It was to have relatively small, 60,000 kilowatt units. That was during the time of Colonel Parker, and with hydro construction going in full force, he thought it would be wise to secure some

MR. HARE: specialists in thermal plant design. So he contracted with Charles T. Main, Inc., of Boston whose President, Mr. Uhl, was Chairman of the TVA Board of Consultants, to assist with the design of that thermal plant. They sent men from Boston who worked in Knoxville really as a part of TVA's organization in the design of that plant.

As time went on, TVA's personnel became quite competent in that field. During the succeeding years, some of the most advanced designs in that field have come from TVA.

DR. CRAWFORD: Was there any planning in TVA for a nuclear plant at the time you left?

MR. HARE: No, there was none. That has come since I left.

DR. CRAWFORD: When was this Board of Consultants developed, and whose idea was that, Mr. Hare?

MR. HARE: I wish I could answer that question. I would ask Mr. Lilienthal that question. It's a very important question. In my mind, that was a decision of TVA management that has paid great dividends. You see, TVA has done its own construction, and it is remarkable to me that they haven't been attacked more by the private construction industries--the major construction organizations. At one time there were two of us attending a hearing in Washington in the Senate, and the late Senator Overton from Louisiana, was the Chairman. He was a very tough-minded man. They were holding a hearing on proposed authorities for other areas of the country.

There was a delegation there from the Associated General Contractors. To our surprise, they got up one morning and attacked TVA on its cost-keeping of construction by saying that TVA didn't know what the construction costs were, and the costs were not available to the public and so forth. We were amazed that they were so uninformed. We went to the TVA office, secured a copy of the

MR. HARE: Gunter'sville Project report, and submitted that report as evidence (Cont'd.)

that TVA did keep costs; that the costs were, in fact, low and reasonable; and that the costs were available to Congress and to the public. You know, there has been since then little criticism, it seems to me, that has stemmed from the fact that TVA does its own work in construction.

DR. CRAWFORD: Why do you suppose there has been so little criticism?

MR. HARE: Well, I don't know. I think, again, that the ability and integrity of the TVA organization is recognized in all corners. My work during the past 15 years has required my dealing with private contractors--very large contractors. They are the largest in this country with contracts for power plants. Just the power plants each cost about one hundred million dollars. In dealing with those contractors it was known that I was from TVA and other staff members with me were from TVA. It didn't hurt us at all, because their claims for extras were all settled for those major projects without law suits. Just by sitting across the table and negotiating, the contractors realized that we were going to treat them fairly, but that we knew what the score was.

DR. CRAWFORD: Was your work changed in any way in the re-organization of TVA in 1948?

MR. HARE: The re-organization of TVA in 1948?

DR. CRAWFORD: Yes, sir, the administrative changes that year. Did that not affect the engineering part?

MR. HARE: Well, I don't believe I know just what changes specifically you are talking about.

DR. CRAWFORD: I believe that some of the departments were changed under the Board. I think a larger number were arranged to report directly to the Board.

MR. HARE: Well, it didn't seem to affect the engineering organization, in my opinion. 1948, I don't even remember. We were busy, and I don't remember any change.

DR. CRAWFORD: Was your work affected directly by Congressional appropriations? Did you have much irregularity from year to year in the scale of your work?

MR. HARE: Not too much during the period I was here. You see, I left in '54. Of course, there were variations. There had to be, and you would expect that, but I don't think anything serious.

DR. CRAWFORD: Were you generally able to keep projects moving along at the speed at which you wished?

MR. HARE: Yes. TVA public relations have been superb. They inform the people. People want to know what is going to change their environment. TVA has had a legal staff, a public relations office, the engineers that participated, and all branches including agriculture people, and they have informed the public. I just mentioned that because it shows the value of a well-rounded organization. The engineers can do the technical part, but there are many other facets to TVA in addition to engineering. The only way to accomplish an overall program and keep the projects moving ahead is by unifying that effort.

DR. CRAWFORD: What did you consider the major work of TVA in the early period?

Mr. Hare? Did you think of it as production of power, flood control, navigation?

MR. HARE: Well, of course, as an engineer, my attention was focused on structures-- water control structures. And that was needed. I knew and appreciated the need for the agricultural program. It was evident, that as you traveled around you could see the erosion and the fact that fertility had been washed away. The low income of the inhabitants of the area was because their income was derived largely from the land. So, I appreciated other things, but my attention was focused on water-control structures, I must confess.

DR. CRAWFORD: Do you feel that part of TVA has been a success?

MR. HARE: Oh, I think the whole part of TVA has been a success. I don't single that out. I think that the entire program has been successful, don't you?

DR. CRAWFORD: Yes, sir, I do. And thank you very much for the information, Mr. Hare.

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